EDS-305/308/309/316 Series

5, 8, 9, and 16-port unmanaged Ethernet switches

> Redundant dual 24 VDC power inputs
> Relay output warning for power failure and port break alarm
> Broadcast storm protection
> Transmits VLAN tag packets transparently
> -40 to 75°C operating temperature range (T models)

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.

Introduction

The EDS-305/308/309/316 are 5, 8, 9, and 16-port Ethernet switches that provide an economical solution for your industrial Ethernet connections. The built-in relay warning function alerts network engineers when power failures or port breaks occur, and the switches are designed for harsh industrial environments, such as in hazardous locations (Class 1 Div. 2/Zone 2). The switches comply with FCC, TÜV, UL, and CE standards, and come in two model types: standard operating temperature range of 0 to 60°C, and extended operating temperature range of -40 to 75°C. Both models undergo a 100% burn-in test to ensure that they fulfill the special needs of industrial automation control. The EDS-305/308/309/316 series switches can be installed easily on a DIN-Rail or in a distribution box.

Specifications

Technology

Standards: IEEE 802.3 for 10BaseT,
IEEE 802.3u for 100BaseT(X), 100BaseFX,
IEEE 802.3x for Flow Control

Processing Type: Store and Forward

Flow Control: IEEE 802.3x flow control, back pressure flow control

Interface

RJ45 Ports: 10/100BaseT(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection

Fiber Ports: 100BaseFX ports (SC/ST connector)

LED Indicators: PWR1, PWR2, Fault, 10/100M (TP port), and 100M (Fiber port)

DIP Switch: Port break alarm mask

Alarm Contact: One relay output with current carrying capacity of 1A @ 24 VDC

Power Requirements

Input Voltage:
24 VDC (12 to 45VDC), redundant inputs

Input Current (@ 24 V):
0.27A (EDS-316), 0.44A (EDS-316A, EDS-316A-M, EDS-316A-S, EDS-316A-MM, EDS-316-SS, EDS-316-MS), 0.29A (EDS-309), 0.13A (EDS-308), 0.25A (EDS-308-M, EDS-308-S, EDS-308-MM, EDS-308-SS), 0.13A (EDS-305), 0.17A (EDS-305-M, EDS-305-S)

Overload Current Protection:
1.6A (EDS-308-M, EDS-308-S, EDS-308-MM, EDS-308-SS, EDS-316, EDS-316-M, EDS-316-MM, EDS-316-MS, EDS-316-S, EDS-316-SS)
1.1A (EDS-305, EDS-305-M, EDS-305-S, EDS-308)

Connection: Removable 6-pin terminal block

Reverse Polarity Protection: Present

Optical Fiber

	100BaseFX		
	Multi Mode	Single Mode	Single Mode, 80 km
Wavelength	1300 nm	1310 nm	1550 nm
Max. TX	-10 dBm	0 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm	-34 dBm
Link Budget	12 dB	29 dB	29 dB
Typical Distance	5 km, 2 km (EDS-316-T)[a] 4 km, 2 km (EDS-316-T)[b]	40 km [c]	80 km [d]
Saturation	-6 dBm	-3 dBm	-3 dBm

a. 50/125 μm, 800 MHz*km fiber optic cable
b. 62.5/125 μm, 500 MHz*km fiber optic cable
c. 9/125 μm, 3.5 PS/(nm*km) fiber optic cable
d. 9/125 μm, 19 PS/(nm*km) fiber optic cable

Physical Characteristics

Housing: IP30 protection, metal case

Dimensions (W x H x D):
EDS-309/308/305 series: 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)
EDS-316 series: 80.5x 135 x 105 mm (3.16 x 5.31 x 4.13 in)

Weight: EDS-309/308/305 series: 630 g
EDS-316 series: 1140 g

Installation: DIN-Rail mounting, wall mounting (optional kit)

Environmental Limits

Operating Temperature: 0 to 60°C (32 to 140°F),
-40 to 75°C (-40 to 167°F) for T models

Storage Temperature: -40 to 85°C (-40 to 185°F)

Ambient Relative Humidity: 5 to 95% (non-condensing)

Regulatory Approvals

Safety:
EDS-305/308/309 series: UL508, UL60950-1, CSA C22.2 No.60950-1, EN60950-1
EDS-316 series: UL508, UL60950-1, EN60950-1

Hazardous location:
UL/cUL Class 1, Division 2, Groups A, B, C and D (EDS-316 Pending)
ATEX Class 1, Zone 2, Ex nC IIC (EDS-308/309/316 Pending)

Maritime: DNV, GL

EMI: FCC Part 15, CISPR (EN55022) class A

EMS: EN61000-4-2 (ESD), level 3
EN61000-4-3 (RS), level 3
EN61000-4-4 (EFT), level 3
EN61000-4-5 (Surge), level 3
EN61000-4-6 (CS), level 3

Shock: IEC60068-2-27

Free Fall: IEC60068-2-32

Vibration: IEC60068-2-6

MTBF: EDS-305 series: 422,000 hrs
EDS-308 series: 255,000 hrs
EDS-309 series: 396,000 hrs
EDS-316 series: 257,000 hrs
Database: MIL-HDBK-217F, GB 25°C

*Please check Moxa's website for the most up-to-date certification status.

Warranty

5 years (see www.moxa.com/warranty for details)

3

Industrial Ethernet Infrastructure > EDS-305/308/309/316 Series

Dimensions (unit = mm)

EDS-309/308/305 Series
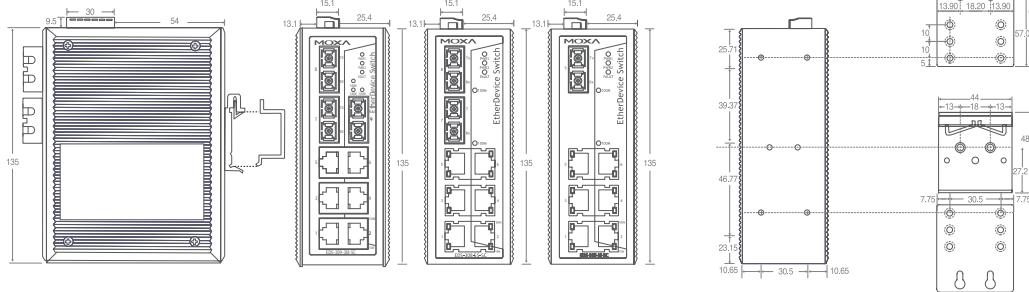
Side View   Front View   Rear View   Panel Mounting Kit

EDS-316 Series
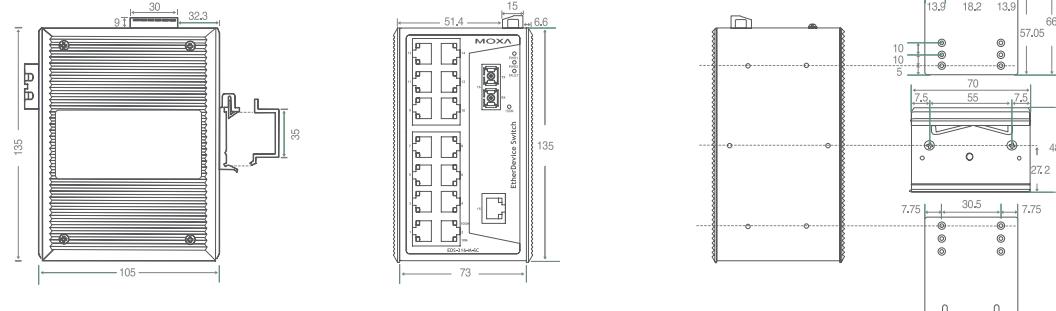
Side View   Front View   Rear View   Panel Mounting Kit

⦂ Ordering Information

Model Name		Port Interface				
			100BaseFX			
Standard Temperature (0 to 60°C)	Extended Temperature (-40 to 75°C)	10/100BaseT(X)	Mulit Mode, SC Connector	Multi Mode, ST Connector	Single Mode, SC Connector	Single Mode, SC Connector, 80 km
EDS-305 Series						
EDS-305	EDS-305-T	5	---	---	---	---
EDS-305-M-SC	EDS-305-M-SC-T	4	1	---	---	---
EDS-305-M-ST	EDS-305-M-ST-T	4	---	1	---	---
EDS-305-S-SC	EDS-305-S-SC-T	4	---	---	1	---
EDS-305-S-SC-80		4	---	---	---	1
EDS-308 Series						
EDS-308	EDS-308-T	8	---	---	---	---
EDS-308-M-SC	EDS-308-M-SC-T	7	1	---	---	---
EDS-308-MM-SC	EDS-308-MM-SC-T	6	2	---	---	---
EDS-308-MM-ST	EDS-308-MM-ST-T	6	---	2	---	---
EDS-308-S-SC	EDS-308-S-SC-T	7	---	---	1	---
EDS-308-SS-SC	EDS-308-SS-SC-T	6	---	---	2	---
EDS-308-S-SC-80	EDS-308-S-SC-80-T	7	---	---	---	1
EDS-308-SS-SC-80	EDS-308-SS-SC-80-T	6	---	---	---	2
EDS-309 Series						
EDS-309-3M-SC	EDS-309-3M-SC-T	6	3	---	---	---
EDS-309-3M-ST	EDS-309-3M-ST-T	6	---	3	---	---
EDS-316 Series						
EDS-316	EDS-316-T	16	---	---	---	---
EDS-316-M-SC	EDS-316-M-SC-T	15	1	---	---	---
EDS-316-M-ST	EDS-316-M-ST-T	15	---	1	---	---
EDS-316-MM-SC	EDS-316-MM-SC-T	14	2	---	---	---
EDS-316-MM-ST	EDS-316-MM-ST-T	14	---	2	---	---
EDS-316-MS-SC	EDS-316-MS-SC-T	14	1	---	1	---
EDS-316-S-SC	EDS-316-S-SC-T	15	---	---	1	---
EDS-316-SS-SC	EDS-316-SS-SC-T	14	---	---	2	---
EDS-316-MS-SC-80		14	1	---	---	1
EDS-316-S-SC-80		15	---	---	---	1
EDS-316-SS-SC-80		14	---	---	---	2
EDS-316-SS-SC-40/80		14	---	---	1	1

Optional Accessories

- **DR-4524:** 45W/2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-120-24:** 120W/5A DIN-Rail 24 VDC power supply, 88 to 132 VAC/176 to 264 VAC input by switch
- **WK-46:** Wall mounting kit
- **RK-4U:** 4U-high 19" rack mounting kit